



Allied Landfill Groundwater Investigation Status Call August 4, 2014 10:00 AM — 12:00 PM Meeting Minutes

ATTENDEES: Mike Wetzel/City of Kalamazoo
John Paquin/City of Kalamazoo
Michael Berkoff/USEPA
Paul Bucholtz/MDEQ
John Bradley/MDEQ

Rick Burns/NTH
Jeff Keiser/CH2M HILL
Cindi Nemke/CH2M HILL
Beth Rohde/CH2M HILL

PREPARED BY: CH2M HILL
DATE: August 5, 2014
PROJECT NUMBER: 419665.FI.01

Summary of Site Reconnaissance Findings

- CH2M HILL conducted site reconnaissance on June 17 – 19.
- Heaving and settlement was observed in many of the existing wells onsite. As a result, groundwater elevations calculated using existing reference elevations (for top of well casings) and the water level measurements collected during the field effort are not believed to be accurate. Water level contours will not be generated until re-surveying of well data is complete. After the well installation, redevelopment and elevation surveys are complete, water levels will be collected and used to create groundwater contour maps.
- Significant sedimentation was observed in 7 wells not planned for groundwater sampling. The wells to be sampled and the 7 additional wells will be redeveloped during the groundwater investigation.
- Well development activities are expected to include surging and pumping.
- The memorandum summarizing site reconnaissance activities and findings is expected to be finalized later this week.
- Drilling bids have been received by CH2M HILL. The drilling work is tentatively scheduled to begin later in August depending on driller availability.

City of Kalamazoo Concerns Identified June 20

Mike Wetzel forwarded a proposed agenda for the August 4 call which included the following concerns from their June 20 letter to the EPA. Each discussion topic is included below as presented in the agenda and the italicized text summarizes the discussion points from the call.

1. Proposed New Wells Screened Intervals

In addition to monitoring the deep and intermediate aquifers at the site, the city requests that the proposed deep wells at the agreed upon locations be installed at appropriate depths to represent the entire production zones of the Kalamazoo Central Wellfield.

The City and the EPA have differing goals for the groundwater investigation. The City's goal is to characterize the regional aquifer and determine if groundwater contamination is reaching the City Central Wellfield. The EPA's goal is to evaluate if groundwater contamination is leaving the Allied Landfill OU1.

The City requested that well screens be set at depths equivalent to those of the Central Wellfield. Additionally, the City requested that the EPA drill to bedrock at each planned, deep boring location to more fully characterize the lower, "regional" aquifer to identify if various transmissive units or

confining layers are present. The operation of the Central Wellfield impacts the gradients in the deep aquifer and the City would like the screens set in the same transmissive zone as the Central Wellfield.

CH2M HILL identified that the proposed depth of the deep borings in the groundwater investigation is to a minimum elevation of 630 feet above mean sea level. While this depth is above the elevation of some of the Central Wellfield screened intervals, it is located between the bottom of the Allied Landfill OU1 and the Central Wellfield. If groundwater impacts were leaving the Allied Site, they would first be observed at shallower depths. To support the EPA goal of identifying if groundwater contamination is leaving the Allied Landfill, the EPA is planning to screen the deep wells shallower, closer to the Allied Landfill where impacts would be more likely observed. Additionally, groundwater elevation measurements from a shallower location in the aquifer will better indicate flow potential between various aquifers present.

potentially impacting the head to Allied

The City noted that various transmissive units or confining layers could be present below the planned drilling target of 630 feet AMSL. CH2M HILL noted that additional transmissive units may be identified by drilling to bedrock; however, this information is not needed for placement of well screens to meet EPA's objectives.

For further discussion of this issue, CH2M HILL developed potential conceptual scenarios to show how the screen placement(s) may be selected based on varying sets of subsurface conditions.

2. Excluded Wells & Parameters

In order to accurately compare the 2014 groundwater monitoring event to the event approximately ten years previous, the city believes it is imperative to match both monitoring wells sampled and parameters analyzed. This is consistent with consecutive groundwater monitoring events for state-regulated landfills and other Superfund sites in the Kalamazoo area.

Clarification was made of specific analytes that were analyzed for during the RI but that are excluded from the planned groundwater investigation. Excluded RI parameters consist of the following:

- Pesticides
- General water quality parameters including:
 - Chloride
 - Bicarbonate Alkalinity
 - COD
 - Nitrate/Nitrite Nitrogen
 - Sulfate
 - TOC
 - Total Alkalinity
 - Total Suspended Solids
 - Carbonate Alkalinity
 - Hydroxide Alkalinity

Groundwater samples collected during the groundwater investigation will be analyzed for:

- Target Compound List (TCL) polychlorinated biphenyls (PCBs),
- TCL volatile organic constituents (VOCs)
- TCL semi-volatile organic constituents (SVOCs)
- Target Analyte List (TAL) metals, plus mercury and cyanide
- Field parameters (measured during completion of low-flow sampling) including:
 - Temperature

- pH
- Specific conductance
- Dissolved oxygen
- Oxidation-reduction potential
- Turbidity

Pesticides were excluded from the list because of the limited detections during the RI with no exceedances of criteria and determination that they were not potential contaminants of concern for the site. Results from analysis of general water quality parameters would not be useful in developing the long-term-monitoring program and were excluded from the list. The EPA and the City concurred on the analyte list after clarification (with the exception of 1,4-dioxane discussed in item 5 below).

3. Kalamazoo Alternative Proposal

Clarification of those items suggested by the City that were included in the monitoring plan.

This issue was around the wording in the groundwater monitoring plan. There was concern that the groundwater monitoring plan did not accurately characterize or consider the City's input.

4. Omission of MW-5R and MW-19BR

EPA has decided not to include these wells in the groundwater monitoring plan.

The City and EPA agree to disagree on the value that data from these wells would provide. MW-5R and MW-19BR will not be sampled.

5. 1,4-Dioxane Samples

The city requests that 'background' and 'down gradient' wells be sampled for 1,4-Dioxane.

EPA responded that the City can collect split samples for 1,4-dioxane analysis from all or a subset of the wells that they select. EPA requires background wells be included in the split sampling. CH2M HILL requested the City identify wells intended for split sampling in advance of the field effort for planning purposes.

Background wells included in the groundwater investigation are MW-6 and the MW-7 well nest. The MW-7 nest already includes a shallow well, and an intermediate and deep well are planned. Completion of these wells and their exact screen placements will depend on subsurface conditions encountered. These 4 wells should be included in any subset of wells where the City intends to have split samples analyzed for 1,4-dioxane.

The City may elect to fill bottles concurrently with CH2M HILL field crews or CH2M HILL can fill bottles provided by the City. Staff collecting samples are required to have 40-hour Hazwoper training.

6. Excluding the proposed down gradient, off-site monitoring well.

EPA has decided that an off-site, down gradient nested well set will not be included in the scope of the Allied Groundwater Monitoring Plan.

The proposed location does not meet the objective of identifying if groundwater impacts are leaving the Allied OU1 site. Several other potential sources of groundwater impacts are located between the Allied OU1 site and the City's proposed location. The City indicated they may choose to install a downgradient off-site monitoring well in the future.